

Claims

1. A method for producing ground surfaces by means of a construction machine, in particular a hydraulic excavator with an excavator comprised of one single or a multitude of components including a shovel applicable to the surface of the ground, and a lifting cylinder for lifting and lowering the excavator equipment; whereby the lifting cylinder of the excavator equipment is actively connected with a least one work pump via a control device actuated by the operator; and whereby the lifting cylinder is lifted, lowered or blocked depending on the switching position of the control device; characterized in that for compensating the weight of the excavator equipment and for adjusting an approximately constant pressure of application of the shovel to the surface of the ground as the excavator equipment is moving and working, the lifting side of the lifting cylinder, upon actuation of an actuating element, is automatically acted upon by an adjustable compensation pressure by supplying or evacuating a hydraulic medium.

2. The method according to claim 1, characterized in that the compensation pressure is generated by an additional pump.

3. The method according to claim 1, characterized in that the compensation pressure is generated by the work pump.

4. The method according to claim 1, 2 or 3, characterized in that the position of the point of gravity of the excavator equipment is monitored and the compensation pressure is automatically adapted to any shift in the position of the point of gravity.

5. The method according to claim 1, 2, 3 or 4, characterized in that the admission of the compensation pressure is terminated upon actuation of the control device by the operator.

6. A construction machine, in particular a hydraulic excavator for producing ground surface with excavator equipment comprising one or more components, including a shovel (7) applicable to the ground surface, and a lifting cylinder (3) for lifting and lowering the excavator equipment, whereby the lifting cylinder (3) of the excavator equipment is actively connected with at least one work pump (9) via a control device (8) actuated by the operator, and whereby the lifting cylinder (3) can be lifted, lowered or blocked depending on the switching position of the control device (8); characterized in that for compensating the weight of the excavator equipment and for adjusting an approximately constant force of application of the shovel (7) to the surface of the ground, the lifting side of the lifting cylinder (3) is connected via a switchable actuating

element (16, 18) with a system for supplying and evacuating hydraulic medium for admitting a constant, adjustable compensation pressure.

7. The construction machine according to claim 6, characterized in that the system for supplying or evacuating hydraulic medium comprises a valve (12) arranged parallel with the control device designed in the form of a control slide (8); an auxiliary pump (29); and a tank; whereby the valve (12) delivers the compensation pressure generated by the auxiliary pump (29) to the lifting side of the lifting cylinder (3), and connects the lowering side of the lifting cylinder (3) with the tank; and whereby the pressure of the auxiliary pump (29) is adjustable.

8. The construction machine according to claim 7, characterized in that the pressure of the auxiliary pump (29) can be adjusted via a pressure control valve (13).

9. The construction machine according to claim 7, characterized in that the auxiliary pump is an adjustable, pressure-regulated servo-pump (27).

10. The construction machine according to claim 6, characterized in that the device for supplying and evacuating hydraulic medium is formed by the work pump (9) and the control device designed in the form of a control

slide (8) and actuated by a manual control valve (17) can be separated from the manual control valve (17) by means of a valve (36) and switched to the lifting position via the constant pressure of a control pump (37); and that a pressure control valve (13) is installed in the line (11) leading from the control slide (8) to the lifting side of the lifting cylinder (3), in a way such that the compensation pressure can be supplied by the work pump (9).

11. The construction machine according to claim 6 or any one of the subsequent claims, characterized in that provision is made for a selector switch (14) for adjusting the compensation pressure.

12. The construction machine according to claim 6 or any one of the subsequent claims, characterized in that provision is made in a control line (31) leading to the pressure control valve (13) or to the pressure-regulated servo-pump (27) for a measuring instrument for detecting any shift in the position of the point of gravity of the excavator equipment, said measuring instrument supplying a modulated control signal to the pressure control valve (13) or to the pressure-regulated servo-pump (27) in order to change the compensation pressure in such a way that the force of application of the shovel (7) remains constant as the latter is moving and working.